

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 determining a first set of suitable channels carrying optical signals in a first
3 direction and a second set of suitable channels carrying optical signals in a second,
4 opposite direction; and
5 comparing the second set of suitable channels against a channel in the first set of
6 suitable channels using matching criteria.
- 1 2. The method of claim 1, wherein the determining comprises:
2 analyzing signal characteristics of channels in the first and second directions.
- 1 3. The method of claim 2, wherein the determining further comprises:
2 selecting the channels in the first and second directions for analysis based on
3 quality criteria.
- 1 4. The method of claim 2, wherein the determining further comprises:
2 detecting optical signals in the channels that represent a conversation of interest.
- 1 5. The method of claim 2, wherein the determining further comprises:
2 accessing an optical fiber carrying signals in the first and second directions; and
3 extracting the channels from the optical fiber.
- 1 6. The method of claim 2, wherein the determining further comprises:
2 accessing a first optical fiber carrying signals in the first direction and a second
3 optical fiber carrying signals in the second direction; and
4 extracting the channels from the first and second optical fibers.

1 7. The method of claim 2, wherein the determining further comprises:
2 recording the signal characteristics of the channels in a data store.

1 8. The method of claim 2 further comprising:
2 outputting the signal characteristics of the channels.

1 9. The method of claim 1, wherein the matching criteria comprises:
2 a marker specific to a communications protocol layer.

1 10. The method of claim 1 further comprising:
2 detecting a match between the channel in the first set of suitable channels and one
3 of the channels in the second set of suitable channels.

1 11. The method of claim 1 further comprising:
2 outputting the match.

1 12. The method of claim 1 further comprising:
2 repeating the comparing for another channel in the first set of suitable channels.

1 13. The method of claim 1 further comprising:
2 obtaining the matching criteria.

1 14. The method of claim 1 further comprising:
2 obtaining signal characteristics that define a suitable channel.

1 15. The method of claim 15, wherein the signal characteristics are selected from the
2 group consisting of speed, protocol, and encoding.

1 15. A computer-readable medium having executable instructions to cause a processor
2 to execute a method comprising:
3 determining a first set of suitable channels carrying optical signals in a first
4 direction and a second set of suitable channels carrying optical signals in a second,
5 opposite direction; and
6 comparing the second set of suitable channels against a channel in the first set of
7 suitable channels using matching criteria. analyzing signal characteristics of channels in
8 the first and second directions.

1 16. The computer-readable medium of claim 15, wherein the method further
2 comprises:
3 analyzing signal characteristics of channels in the first and second directions to
4 determine the first and second set of suitable channels.

1 17. The computer-readable medium of claim 16, wherein the method further
2 comprises:
3 selecting the channels in the first and second directions for analysis based on
4 quality criteria.

1 18. The computer-readable medium of claim 16, wherein the method further
2 comprises:
3 detecting optical signals in the channels that represent a conversation of interest to
4 determine the first and second set of suitable channels.

1 19. The computer-readable medium of claim 16, wherein the method further
2 comprises:
3 detecting optical signals in the channels that represent a conversation of interest to
4 determine the first and second set of suitable channels.

1 20. The computer-readable medium of claim 16, wherein the method further
2 comprises:
3 recording the signal characteristics of the channels in a data store.

1 21. The computer-readable medium of claim 16, wherein the method further
2 comprises:
3 outputting the signal characteristics of the channels.

1 22. The computer-readable medium of claim 15, wherein the method further
2 comprises:
3 detecting a match between the channel in the first set of suitable channels and one
4 of the channels in the second set of suitable channels. .

1 23. The computer-readable medium of claim 22, wherein the method further
2 comprises:
3 outputting the match.

1 24. The computer-readable medium of claim 15, wherein the method further
2 comprises:
3 repeating the comparing for another channel in the first set of suitable channels.

1 25. The computer-readable medium of claim 15, wherein the method further
2 comprises:
3 obtaining the matching criteria.

1 26. The computer-readable medium of claim 15, wherein the method further
2 comprises:
3 obtaining signal characteristics that define a suitable channel.

1 ²⁷~~27~~ An apparatus comprising:
2 a plurality of optical wavelength filters to extract channels from a plurality of
3 optical fibers;
4 a plurality of optical signal analyzers coupled to the plurality of optical wavelength
5 filters to analyze signal characteristics of optical signals in the channels and further
6 coupled to a data store to record the signal characteristics in the data store; and
7 a matcher coupled to the data store to determine sets of suitable channels based on
8 the signal characteristics and further coupled to the plurality of optical wavelength filters
9 to detect matching optical signals in the sets using matching criteria.

1 ²⁸~~28~~ The apparatus of claim 27 further comprising:
2 a plurality of optical taps coupled to the plurality of optical wavelength filters to
3 provide access to the channels in the plurality of optical fibers.

1 ²⁹~~29~~ The apparatus of claim 27, wherein the matcher selectively couples to a network
2 management device to obtain configuration parameters and to output the matching optical
3 signals to the network management device.

1 ³⁰~~30~~ A system comprising:
2 a processor for coupling to an optical network; and
3 an identification process executed by the processor to cause the processor to
4 analyze signal characteristics of optical signals in channels in the optical network, to
5 determine sets of suitable channels based on the signal characteristics, and to detect
6 matching optical signals in the sets using matching criteria.